Medical Physics Education in South Asia: Problems and Perspectives

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Founder President, Bangladesh Medical Physics Society (BMPS)
Outline

- South Asian countries population with sex ratio, Cancer deaths/year and Cancer prevalence as proportion per 100,000 population
- Cancer statistics in South Asia
- Incidence and Mortality rate of Cancer

- Manpower & Studies related to cancer treatment
- Statistics of study in Science in SA region
- Societies of Medical Physics in South Asia Region
- MP education in SA region
- Female Participation in MP Education in SA region

- Reasons for less female students
- Solution
This study covers South Asian region especially in Bangladesh, India, Nepal and Pakistan.
### Bangladesh

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>159.86 M</td>
<td>102.44</td>
<td>49.398</td>
<td>103,300</td>
<td>2678</td>
</tr>
</tbody>
</table>

### Nepal

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.4 M</td>
<td>93.82</td>
<td>51.594</td>
<td>20,000</td>
<td>3103</td>
</tr>
</tbody>
</table>

http://journal.sajc.org/viewimage.asp?img=SouthAsianJCancer_2012_1_1_1_96489_b1.jpg
### India

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1276.2 M</td>
<td>107.07</td>
<td>48.294</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pakistan

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>190.4 M</td>
<td>105.65</td>
<td>48.627</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cancer deaths/year: 633,455
Cancer prevalence as proportion per 100,000 population: 2114

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### Sri Lanka

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>208.6 M</td>
<td>95.56</td>
<td>91.135</td>
<td>17,000</td>
<td>3533</td>
</tr>
</tbody>
</table>

### Myanmar

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>54.16M</td>
<td>94.11</td>
<td>105.81</td>
<td>24650</td>
<td>7500</td>
</tr>
</tbody>
</table>

http://journal.sajc.org/viewimage.asp?img=SouthAsianJCancer_2012_1_1_1_96489_b1.jpg
### Bhutan

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>77.651M</td>
<td>116.02</td>
<td>86.20</td>
<td>500</td>
<td>243.1</td>
</tr>
</tbody>
</table>

### Afghanistan

<table>
<thead>
<tr>
<th>Population</th>
<th>Sex ratio</th>
<th>Female %</th>
<th>Cancer deaths/year</th>
<th>Cancer prevalence as proportion per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>320.06 M</td>
<td>102.79</td>
<td>97.29</td>
<td>11,400</td>
<td>188.3</td>
</tr>
</tbody>
</table>


http://journal.sajc.org/viewimage.asp?img=SouthAsianJCancer_2012_1_1_1_96489_b1.jpg
Cancer statistics in South Asia

Cancer Statistics in different countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>Number of Cancer Patients in million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>1.3%</td>
</tr>
<tr>
<td>India</td>
<td>2.5%</td>
</tr>
<tr>
<td>Nepal</td>
<td>0.27%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1.4%</td>
</tr>
<tr>
<td>Srilanka</td>
<td>0.25%</td>
</tr>
</tbody>
</table>
Incidence and Mortality rate of Cancer
Incidence and Mortality Rate of Cancer

Incidence Rates of Cancer:

Developing and developing countries economically developed countries nearly twice as high as in economically developing countries in both males and females

Mortality rates for all cancers

Developing countries are only 21% higher in males and only 2% higher in females than developed countries
Disparities in Incidence and Mortality patterns

Between developed and developing countries

- Regional differences in the prevalence
- Distribution of the major risk factors
- Detection practices
- Availability and use of treatment services
**Manpower & Studies related to cancer treatment**

**MANPOWER**
- Medical Physicist
- Radiation
- Oncologist
- Radiotherapy
- Technician

**RELATED STUDY**
- Medical Physics
- Medical Doctor (Oncologist)
- Diploma in RT
## Statistics of study in Science in SA region

<table>
<thead>
<tr>
<th>Country</th>
<th>% Male</th>
<th>% Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>85.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>80.5</td>
<td>19.5</td>
</tr>
<tr>
<td></td>
<td>37.6 (Science)</td>
<td>62.4 (Others)</td>
</tr>
<tr>
<td>India</td>
<td>64.3</td>
<td>35.7</td>
</tr>
<tr>
<td></td>
<td>30.8 (Science)</td>
<td>69.2 (Others)</td>
</tr>
<tr>
<td>Nepal</td>
<td>71.6</td>
<td>44.5</td>
</tr>
<tr>
<td>Pakistan</td>
<td>86</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>16.9 (Science)</td>
<td>83.1 (Others)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>56.4</td>
<td>43.6</td>
</tr>
<tr>
<td>Myanmar</td>
<td>49.3</td>
<td>50.7</td>
</tr>
<tr>
<td></td>
<td>85.5 (Science)</td>
<td>14.5 (Others)</td>
</tr>
<tr>
<td>Bhutan</td>
<td>53.0</td>
<td>47.0</td>
</tr>
</tbody>
</table>

*CHEER2012 #MHRD2014 $MOE-BD @PES-PK*
MP education in SA region

Bangladesh
- Gono Biswabidyalay
- University of Dhaka

India
- Anna University - Chennai
- Bharathiar University
- Bharathidasan University
- CMJ University
- Christian Medical College & Hospital
- D. Y. Patil Education Society Deemed University
- Jagadguru Sri Shivarathreeswara University
- Government Medical College, Thiruvananthapuram
- Integral University
- Kerala University of Health and Science

Pakistan
- Pakistan Institute of Engineering & Applied Sciences

Nepal
- N/A

Sri Lanka
- University of Peradeniya
- University of Colombo

Bhutan, Myanmar, Afghanistan
- N/A
Female Participation in MP Education in SA region

Bhutan, Myanmar, Afghanistan has no MP EDUCATION
In a world only 30% of researchers are women low in science subjects compared to social subjects

✓ Challenge of balancing family life and career to a lack of childcare support and role models.

✓ Gender inequalities in women’s academic careers: social class, caste, religion, ethnicity and language.

✓ Nurturing extended family roles. In developing countries females: household work and early marriage.

✓ Backgrounds and beliefs
Although most governments have made female education mandatory up to class ten, it usually happens that after the 10th form parents are not interested in further education.

Society's concern about occupational radiation hazards forces the females to discontinue with their careers.

So it is obvious that Females Never Succeed to a Career As Medical Physicist Or In Higher Academic Posts.
Solution

✓ Institutes can give exemption/reduction in fees to female students.

✓ Female students in particular quota system.

✓ A public awareness is needed and through media it can be circulated.

✓ With encouragement, professional development

✓ Financial support
Activities of BMPS, AMPL, NAMP, etc.
Activities of BMPS

Awareness for MP in Women College, School

Kumudini Government Girls College, 6 October, 2016

Dhaka Mohilla (women) Polytechnic Institute 11 April, 2016
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